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NOTES ON GEOGRAPHIC DISTRIBUTION

# First record of *Rineloricaria reisi, R. stellata* and *R. zaina* (Siluriformes: Loricariidae) from the Río Uruguay basin in Argentina

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**ABSTRACT:** *Rineloricaria reisi*, *R. stellata*, and *R. zaina* are registered for the first time in freshwaters of Argentina. These three species were found in the Río Uruguay basin in Misiones Province. As a result of these findings, five species of *Rineloricaria* are found in the Río Uruguay basin in Argentina. A key of *Rineloricaria* species from that basin is also provided.

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The genus *Rineloricaria* includes 65 species distributed from Panama to Río de la Plata in Argentina (Vera-Alcaraz *et al.* 2012). *Rineloricaria* was diagnosed based on the following combination of characters: postorbital notch present, inferior lip with short rounded papillae, premaxilla with 7 to 15 teeth on each hemiseries; dentary teeth strong, deeply bicuspidate, and larger than those of premaxilla; coloration of dorsal region with dark-brown bars or blotches; abdomen with a conspicuous polygonal preanal plate, usually bordered by other three large trapezoidal plates (Fichberg and Chamon 2008).

The Río Uruguay basin is inhabited by the greatest species richness of the genus *Rineloricaria*. The following eleven species of this genus were registered from this basin: *R. anhaguapitan* Ghazzi, 2008; *R. anitae* Ghazzi, 2008; *R. capitonia* Ghazzi, 2008; *R. isaaci* Rodriguez & Miquelarena, 2008; *R. misionera* Rodriguez & Miquelarena, 2005, *R. reisi* Ghazzi, 2008; *R. sanga* Ghazzi, 2008; *R. setepovos* Ghazzi, 2008; *R. stellata* Ghazzi, 2008; *R. tropeira* Ghazzi, 2008; and *R. zaina*, Ghazzi, 2008. Among them, only *Rineloricaria isaaci* and *R. misionera* were described from the Río Uruguay basin in Argentina.

The aim of this paper is to report the presence of *R. reisi*, *R. stellata*, and *R. zaina* from the Río Uruguay basin in Argentina (Figure 1).

Morphometric and meristic data were taken following Rodriguez and Reis (2008) and Ghazzi (2008).

***Rineloricaria reisi*** Ghazzi, 2008 (Figure 2). Morphometric data are given in Table 1. Premaxilla and dentary teeth 7–7, all of them bilobed with the external cusp shorter. Ten (right side) or twelve (left side) thoracic plates between origin of pectoral and pelvic fin. One preanal plate anteriorly surrounded by 4 polygonal irregular plates. Posterior abdominal region with few small plates, anterior one and pectoral girdle naked. Lateral plates 30, with well developed keels formed by hypertrophied odontodes coalesced in last 10 plates. Supraoccipital and predorsal plates with shallow ridges. Posterior margin of caudal fin concave, upper unbranched ray slightly longer

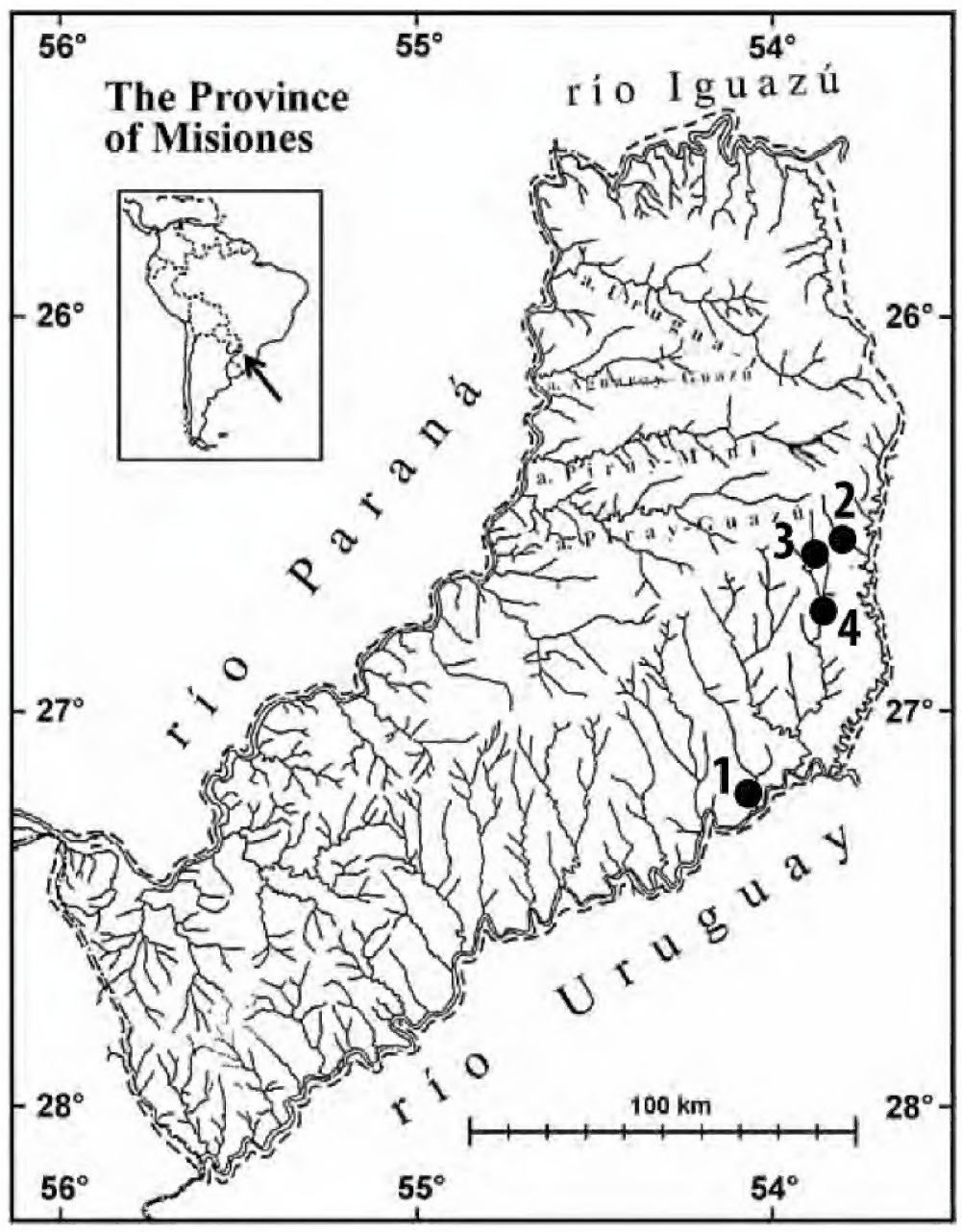


**FIGURE 1.** Map showing the collecting sites in río Uruguay basin, Misiones Province, Argentina. *Rineloricaria reisi*: arroyo Paraiso or Canal Muerto (1), *R. stellata*: arroyo Yabotí-Miní (2) and arroyo San Juan (3), and *R. zaina*: arroyo Yabotí-Miní (4).

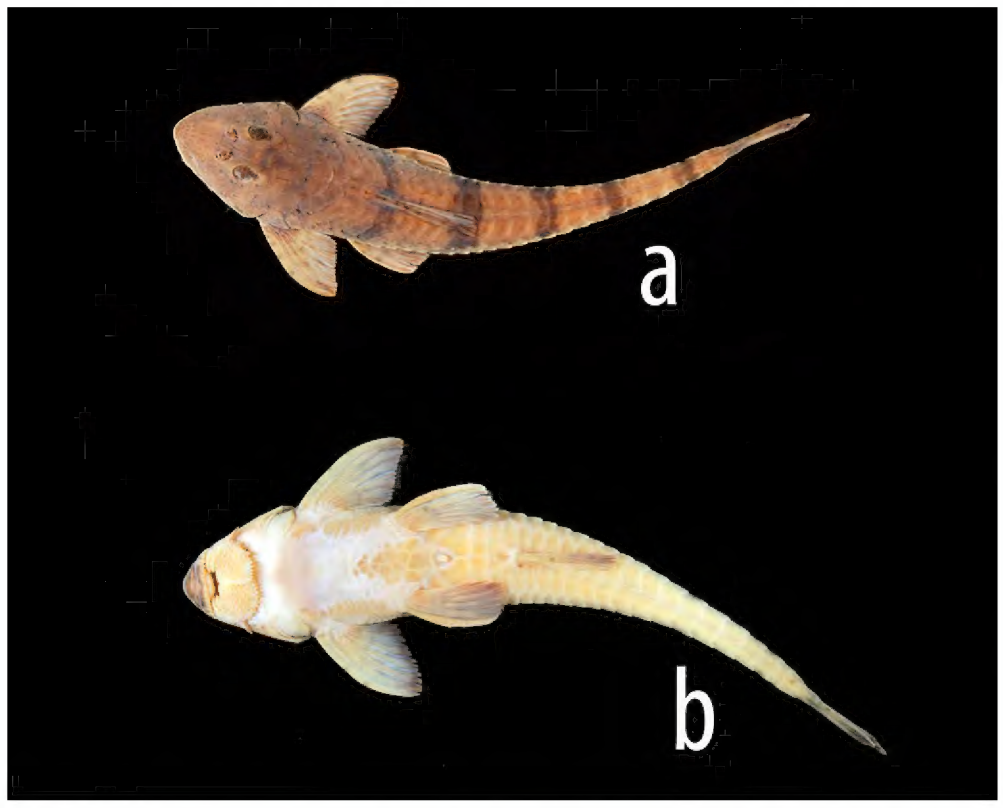


**Figure 2.** *Rineloricaria reisi*. MLP10683, 127.2 mm SL, arroyo Paraiso or arroyo Canal Tuerto. a: dorsal view, b: ventral view.

than lower one, not extended as filament. *Rineloricaria reisi* was described from Brazil, Rio Grande do Sul State, Río Uruguay basin, Rio Piratini. The specimen considered herein was collected in Río Uruguay basin, Misiones Province, arroyo Paraíso or arroyo Canal Tuerto (Figures 1, 3). Material examined: MLP10683, 1 spec., 127.2 mm SL, arroyo Paraíso or arroyo Canal Tuerto, road to Saltos del Moconá (27°14′14.5″ S, 54°02′38.1″ W), December 2007.

***Rineloricaria stellata*** Ghazzi, 2008 (Figure 4). Morphometric data are given in Table 1. Premaxilla and dentary teeth 7 to 8, all of them bilobed with the external cusp shorter. Dentary teeth larger than premaxillary ones. Ten thoracic plates between origin of pectoral and pelvic fin. One preanal plate anteriorly surrounded by 5 polygonal irregular plates. Abdominal region and pectoral girdle covered by plates which decreasing in size anteriorly. Lateral plates 28 or 29 with a well developed keels formed by hypertrophied odontodes, coalesced in last 11 or 12 plates. Supraoccipital and predorsal plates with very shallow ridges. Posterior margin of caudal fin slightly concave with upper unbranched ray

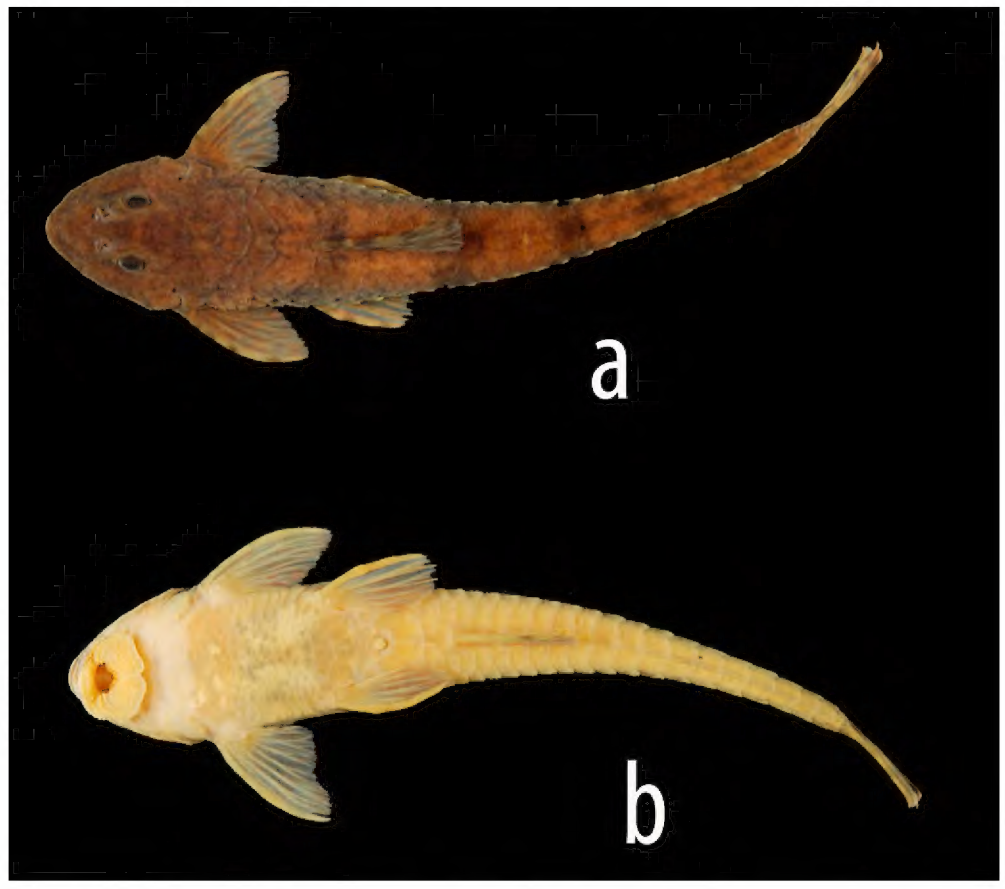


**Figure 4.** *Rineloricaria stellata*. MLP10681, 65 mm SL, arroyo San Juan. a: dorsal view, b: ventral view.

**Figure 3.** Arroyo Paraiso or Canal Tuerto, río Uruguay basin, Misiones Province, Argentina.

extended in a short filament. One male examined with few large odontodes on lateral sides of head and dorsal surface of pectoral fin with large odontodes curved anteriorly. *Rineloricaria stellata* was described from Brazil, Rio Grande do Sul, rio Uruguay basin rios Buricá, Ijuí, Piratina, and Ibicuí. The specimens of *Rineloricaria stellata* examined herein were collected in two streams of the Río Uruguay basin, Misiones Province, arroyo San Juan and arroyo Yabotí-Miní (Figures 1, 5). Material examined: MLP10681, 1 spec., 65 mm SL, arroyo San Juan (26°40′29.68″ S, 53°56′46.77″ W), February 2012. MLP 10682, 7 spec., 75.0–119.1 mm SL, arroyo Yabotí-Miní (26°36′ S, 53°55′ W), February 2001

**Table 1.** Morphometric data of *Rineloricaria reisi* (1 spec.), *R. zaina* (1 spec.), and *R. stellata* (3 spec.).

| | *R. reisi* | *R. zaina* | *R. stellata* |
|---|---|---|---|
| Standard length (mm) | 127.2 | 116.0 | 104.5–119.1 |
| **% of standard length** | | | |
| Predorsal length | 35.2 | 35.2 | 34.7–35.8 |
| Postanal length | 45.6 | 47.5 | 44.8–46.9 |
| Dorsal spine length | 20.7 | 22.8 | 20.1–21.1 |
| Anal spine length | 15.8 | 19.3 | 15.4–16.0 |
| Pectoral spine length | 21.0 | 21.5 | 18.8–19.1 |
| Pelvic spine length | 15.0 | 19.3 | 15.0–15.9 |
| Upper caudal spine length | 16.6 | 18.7 | 15.9–18.6 |
| Lowercaudal spine length | 15.0 | 16.4 | 13.9–15.7 |
| Thoracic length | 14.7 | 15.1 | 16.1–16.4 |
| Abdominal length | 18.2 | 17.0 | 18.2–18.7 |
| Cleitral width | 18.5 | 20.0 | 18.5–19.8 |
| Caudal peduncle depth | 1.8 | 2.2 | 1.91–1.93 |
| Caudal peduncle width | 3.5 | 4.0 | 3.5–3.7 |
| Body width at dorsal fin | 16.8 | 17.5 | 16.7–17.4 |
| Body depth at dorsal fin | 11.1 | 12.2 | 10.9–11.0 |
| Head length | 25.2 | 24.9 | 23.8–24.6 |
| **% of head length** | | | |
| Head depth | 40.9 | 42.6 | 39.7–41.7 |
| Snout length | 54.7 | 52.9 | 49.8–51.0 |
| Interorbital width | 18.1 | 24.2 | 24.5–24.9 |
| Eye diameter | 18.4 | 15.6 | 14.4–15.7 |
| Mouth width | 23.7 | 21.4 | 22.1–24.5 |

**FIGURE 5.** Arroyo San Juan, río Uruguay basin, Misiones Province, Argentina

***Rineloricaria zaina*** Ghazzi, 2008 (Figure 6). Morphometric data are given in Table 1. Premaxillary teeth 10–11. Dentary teeth 8–9; all of them longer and bilobed with the external cusp shorter. Seven thoracic plates between origin of pectoral and pelvic fin. One large preanal plate anteriorly surrounded by 4 polygonal irregular plates. Abdominal region and pectoral girdle totally covered by plates which decreasing in size anteriorly. Lateral plates 28 with shallow keels formed by hypertrophied odontodes, coalesced in last 11 plates. Supraoccipital and predorsal plates with very shallow ridges. Posterior margin of caudal fin concave, upper unbranched ray slightly longer than lower one, not extended as filament. The only specimen examined is a male that bears very large odontodes on lateral sides of head and dorsal surface of pectoral fin with large odontodes curved anteriorly. *Rineloricaria zaina* is known from Brazil, Rio Grande do Sul State, Río Uruguay basin in the confluence of Rio Canoas with Rio Pelotas to Rio Ibicuí. The specimen considered herein was collected in the Río Uruguay basin, Misiones Province, arroyo Yabotí-Miní (Figure 1). Material examined: MLP10684, 1 spec., 116.0 mm SL, Río Uruguay basin, Misiones Province, arroyo Yabotí-Miní (26°43′19.9″ S, 53°50′36.2″ W), February 2012.

*Artificial key of the Rineloricaria species from the Río Uruguay basin in Argentina*

1a Pectoral girdle naked .....2
1b Pectoral girdle covered totally or partially with small plates ..... 3
2a Abdominal plate series in contact with lateral abdominal plates ..... *R. misionera*
2b Abdominal plate series not in contact with lateral abdominal plates ..... *R. reisi*
3a Short and oval area of naked skin at the snout tip not surpassing the anteriormost pore of the infraorbital ramus of the sensory canal ..... *R. zaina*
3b Tip of snout with a long area naked surpassing the anteriormost pore of the infraorbital ramus of the sensory canal .....4
4a Tip of snout with a wide area naked surpassing the anteriormost pore of the infraorbital ramus of the sensory canal .....*R. isaaci*
4b Tip of snout with a narrow area naked surpassing the anteriormost pore of the infraorbital ramus of the sensory canal..... *R. stellata*

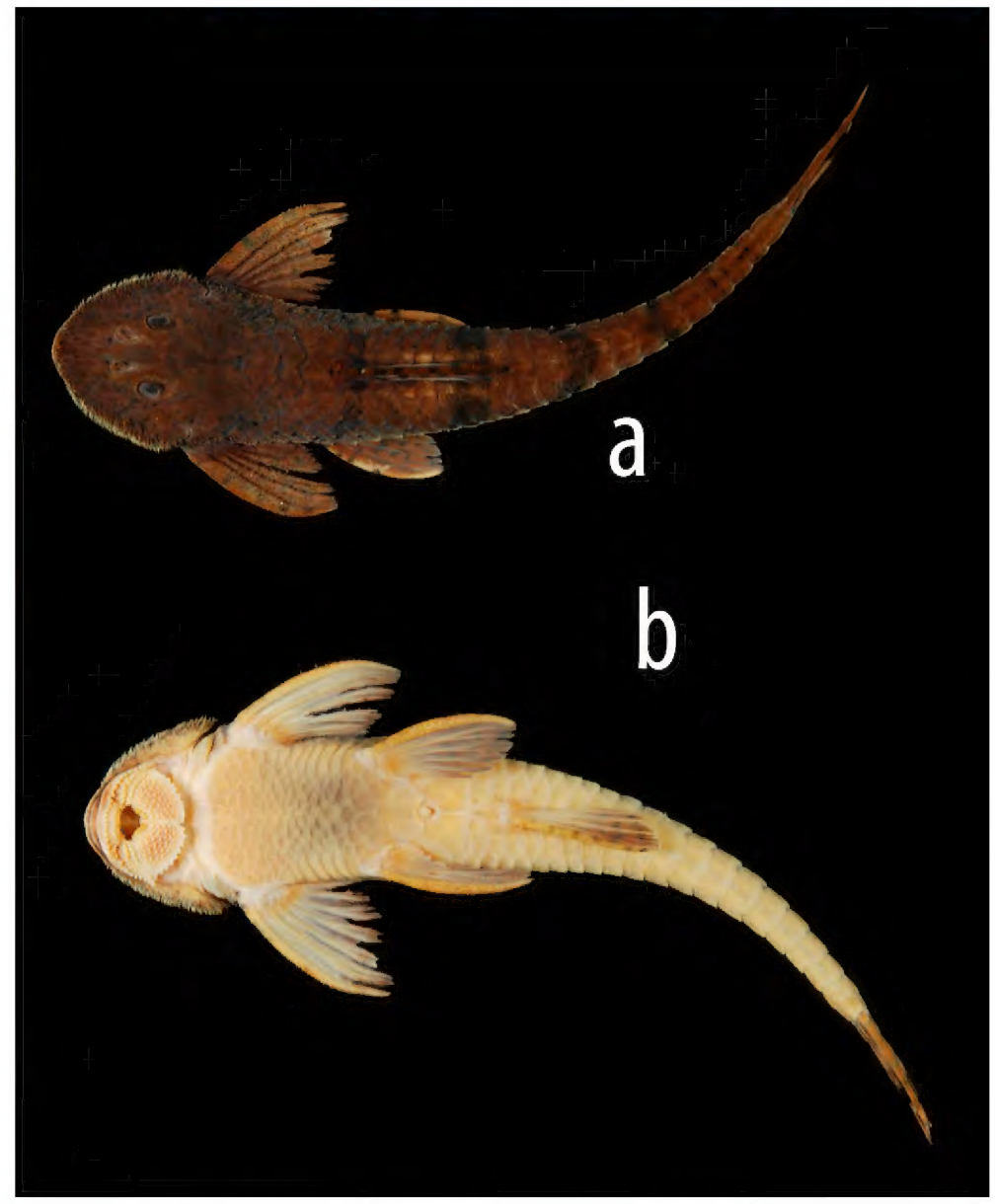


**FIGURE 6.** *Rineloricaria zaina*. MLP10684, 116.0 mm SL, arroyo Yabotí-Miní. a: dorsal view, b: ventral view.

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